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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/759,262	01/19/2004	John J. Kondratuk	4470-00716	6916

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EXAMINER

MORRISON, THOMAS A

ART UNIT PAPER NUMBER

3653

DATE MAILED: 03/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/759,262

Applicant(s)

KONDRATUK ET AL.

Examiner

Thomas A. Morrison

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 January 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) 22-25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 05/21/2004.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election without traverse of claims 1-21 in the reply filed on January 24, 2005 is acknowledged.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 1-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In particular, the claims are replete with language that lacks antecedent basis and is confusing. For example, claim 1 initially recites "a vacuum plenum having a flat surface". Then, claim 1 recites "the plenum surface". It is unclear whether these two surfaces are the same or different. Another example is claim 20, where it is confusing as to which vacuum starter opening is claimed. More specifically, claim 20 depends from claim 18, which also claims starter openings. The above problems are merely exemplary in claims 1-21. Applicant should review claims 1-21 and make the language consistent throughout these claims.

With regard to claim 1, it is also unclear what structural relationship allows the valves to be biased to open under a reduced pressure differential between the vacuum plenum and the vacuum channel when the channel is covered by a sheet.

Similarly, with regard to claim 13, it is unclear what structural relationship allows the valves to be biased open for vacuum communication at a second pressure differential across the valve.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-5 and 7-14 and 16-20, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuzniak in view of Louis et al. In particular, Kuzniak in view of Louis et al. meets all of the limitations of claims 1-5 and 7-14 and 16-20.

Regarding the independent claim 1, discloses a self-valving vacuum distribution system for a sheet transfer apparatus including

a vacuum plenum (1) having a flat surface (bottom surface) over which spaced rotating members (11) operate to define an open vacuum channel (3); and,

vacuum control valves (including 9a and 9b) spaced along the channel (3) in the plenum surface, the valves (including 9a and 9b) held closed by a high pressure differential between the vacuum plenum (1) and the open vacuum channel and biased to open under a reduced pressure differential between the vacuum plenum (1) and the vacuum channel (3) when the channel is covered by a sheet (13) carried over the

channel. Kuzniak includes rotating members (11) that convey the sheets (13), but does not disclose that the rotating members are conveyer belts, as claimed.

Louis et al. discloses a conveyer apparatus that includes a support with controlled suction valves (including 16 and 17) and a plurality of spaced apart conveyer belts (6) surrounding the support. More specifically, Louis et al. explains that, it is necessary for sheets to be positioned accurately in relation to each other on the conveying apparatus, and for them to follow exactly the motion of translation communicated to them by the conveyor in time and space. After this, Louis et al. explains that several different types of arrangements of rotating devices are suitable to perform this operation. See column 1, lines 12-42. It would have been obvious to one of ordinary skill in the art at the time of the invention, to substitute rotating devices (11) of Kuzniak with spaced apart belts, because this merely involves replacing one type of conveying device with another type of conveying device that is equally suitable for controlling the positioning of sheets, as taught by Louis et al.

Regarding claim 2, Figs. 1-4 of Kuzniak show a vacuum starter opening (7) in the plenum surface upstream of the control valves (including 9a and 9b) providing initial vacuum communication between the plenum (1) and the upstream end of the vacuum channel (3).

Regarding claim 3, Fig. 1 of Louis et al. shows that it is well known to provide a conveying apparatus with an infeed device (including 2) adapted to move a line of spaced sheets (3) in series into contact with the conveyor belts (6). Louis et al. explains that such a device cuts and feeds sheets. It would have been obvious to one of

ordinary skill in the art at the time of the invention to provide the Kuzniak apparatus with such a device in order to cut sheets into required widths and then feed the sheets, as taught by Louis et al. See column 2, lines 10-18. Providing such a device on the Kuzniak apparatus will result in the leading edge of each sheet to override the vacuum starter opening (7) of Kuzniak and each control valve of Kuzniak in succession, thereby progressively covering the vacuum channel (3) of Kuzniak and reducing the pressure differential to the reduced level allowing the valves (including 9a and 9b) to be biased open. See, e.g., Fig. 3 of Kuzniak.

Regarding claim 4, Kuzniak discloses that the passage of the trailing edge of each sheet (13) over the control valves (including 9a and 9b) causes the valves to progressively close. See, e.g., column 4, lines 38-52.

Regarding claim 5, Figs. 1 and 2 of Louis et al. show that the conveyer belts (6) have flat coplanar conveying surfaces and show that providing the conveyor belts (6) on the Kuzniak apparatus according to the teachings of Louis et al. will result in the plenum surface being between the belts and being recessed from the conveying surfaces to form the vacuum channel.

Regarding claims 7 and 17, Fig. 2 of Louis et al. shows that it is well known to provide a conveying apparatus with a plurality of laterally adjacent vacuum channels (13), that each channel (13) provides support for an incremental width of a sheet (3), and that a vacuum plenum (15) is operatively connected to the adjacent vacuum channels. Fig. 2 shows that such an arrangement allows a plurality of sheets to be conveyed at the same time. It would have been obvious to one of ordinary skill in the

art at the time of the invention, to provide the Kuzniak apparatus with laterally adjacent vacuum channels in a manner as taught by Louis et al. to convey a plurality of sheets at the same time, as taught by Louis et al.

Regarding claim 8, Figs. 1-4 of Kuzniak show that each of the control valves (including 9a and 9b) includes a vacuum opening in the plenum surface providing vacuum communication between the plenum (1) and the vacuum channel (3), and a valve plate (e.g., 9a) attached to the plenum surface (near 10a) and operative to seal the vacuum opening against the valve bias at the high pressure differential.

Regarding claim 9, Fig. 2 of Louis et al. shows that it is well known to provide a conveyer apparatus with adjacent vacuum channels (13) that are all connected together. As such, providing multiple vacuum channels of the Kuzniak apparatus adjacently in a manner as taught by Louis et al. will result in an arrangement in which a starter vacuum conduit (near 1a) of Kuzniak, which is controlled by the control valve (e.g., 9a), provides the plenum vacuum pressure to the starter opening of the next laterally adjacent vacuum channel when the sheet (13) is wide enough to cover the next adjacent vacuum channel. In particular, the starter channels of the adjacent arrangements will be connected together as taught by Louis et al.

Regarding claim 10, as mentioned above, Louis et al. shows that it is well known to provide a conveyer apparatus with adjacent vacuum channels (13) that are all connected together. As such, providing a plurality of the vacuum channels of the Kuzniak apparatus adjacently in a manner as taught by Louis et al. will result in the starter vacuum conduit (near 1a) of Kuzniak including a vacuum inlet end (near 9a) in

the plenum surface and a vacuum outlet end having an open connection to the vacuum starter opening in the next adjacent vacuum channel. More specifically, the adjacent channel arrangements will all be in communication with each other. Also, the valve plate (e.g., 9a) will be operative to close the inlet end (e.g., near 9a) at the high pressure differential and to open the inlet end at the reduced pressure differential.

Regarding claim 11, as mentioned above, Louis et al. shows that it is well known to provide a conveyer apparatus with adjacent vacuum channels (13) that are connected together. As such, providing a plurality of the vacuum channels of the Kuzniak apparatus adjacently in a manner as taught by Louis et al. will result in a starter vacuum conduit connecting the plenum surfaces of each pair of laterally adjacent vacuum channels. More specifically, all of the adjacent channel arrangements will be in communication with each other, as taught by Louis et al.

Regarding claim 12, again, Louis et al. shows that it is well known to provide a conveyer apparatus with adjacent vacuum channels (13) that are connected together. As such, providing a plurality of the vacuum channels of the Kuzniak apparatus adjacently in a manner as taught Louis et al. will result in a vacuum starter opening in each third vacuum channel and starter vacuum conduit operatively connecting each vacuum starter opening with the next two adjacent vacuum channels. More specifically, Louis et al. appears to show adjacent vacuum channels (13) are all the same and that are connected together. As such, providing a plurality of the vacuum channels of the Kuzniak apparatus adjacently in a manner as taught by Louis et al. will result in the Kuzniak apparatus having adjacent vacuum channels that are all the same and all in



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communication with each other. In other words, every vacuum channel will have a starter opening and a starter vacuum conduit in communication with all of the other adjacent vacuum channels. With every vacuum channel being the same, every third vacuum channel will satisfy the claimed limitation.

Regarding claim 13, Figs. 1-4 of Kuzniak show a sheet-actuated vacuum assisted sheet conveyor for the continuous transfer of sheets delivered in serial spaced relation, the conveyor including

a plurality of spaced rotating members (11) operating over a surface (including 3 and 6a) of a vacuum plenum (1);

a plurality of vacuum control valves (including 9a and 9b) in a vacuum surface spaced in the direction of movement of the rotating members (11) and providing vacuum communication between the plenum (1) and a vacuum channel (3);

the control valves (including 9a and 9B) operative to be held closed by a negative pressure in the plenum (1) sufficient to create a first pressure differential across the valve (including 9a and 9b), the valves (including 9a and 9b) biased to open for vacuum communication at a second pressure differential across the valve (including 9a and 9b) less than the first pressure differential;

means for applying the plenum vacuum (including 4) to an upstream end of the vacuum channel (3) such that, as a sheet (13) moves to progressively cover the vacuum channel (3), vacuum pressure in the channel (3) moves in the downstream direction with the sheet (13) to cause the pressure differential across each valve (including 9a and 9b) in succession to decrease to the second pressure differential and

the valves (including 9a and 9b) to serially open, thereby applying the plenum vacuum directly to the sheet (13) to hold the same against and to move with the rotating members (11). See, e.g., Fig. 3. Kuzniak discloses the rotating members (11), but does not specifically disclose conveyer belts, as claimed. Also, Kuzniak does not specifically show means for moving sheets into planar contact with the conveyer belts. In addition, Kuzniak discloses means for applying the plenum vacuum (including 4) to an upstream end of the vacuum channel, but does not specifically show the location of the means for applying the plenum vacuum, as claimed.

Louis et al. discloses a conveyer apparatus that includes a support with controlled suction valves (including 16 and 17) and a plurality of spaced apart conveyer belts (6) surrounding the support. Also, Fig. 2 of Louis et al. shows that the belts (6) operate over a surface of a vacuum plenum and that the vacuum plenum surface between the belts (6) is recessed to define a vacuum channel (e.g., 13). In addition, Fig. 1 of Louis et al. shows that it is well known to provide a conveying apparatus with means for moving sheets (including 2) into contact with the conveyor belts (6). As mentioned above with regard to claim 1, it would have been obvious to one of ordinary skill in the art at the time of the invention, to replace the rotating devices (11) of Kuzniak with spaced apart belts, because this merely involves replacing one type of conveying device with another type of conveying device that is equally suitable for controlling the positioning of sheets, as taught by Louis et al. Providing the Kuzniak apparatus with belts according to the teachings of Louis et al. will result in the belts being laterally spaced and being driven over a surface of the vacuum plenum (1) of Kuzniak. See Fig.

2 of Louis et al. Also, modifying Kuzniak in a manner as taught by Louis et al. will result in the plenum surface between the belts being recessed from the belts to define a vacuum channel. See Fig. 2 of Louis et al. As mentioned above with regard to claim 3, it also would have been obvious to one of ordinary skill in the art at the time of the invention to provide the Kuzniak apparatus with means for moving sheets into contact with the conveyer belts, in order to cut sheets into required widths and then feed the sheets, as taught by Louis et al. Moreover, Fig. 3 of Kuzniak clarifies that sheets fed thereto progressively cover the vacuum channel (3). Regarding the claimed location of the means for applying the plenum vacuum, this is merely a design choice within the skill of one of ordinary skill in the art. Kuzniak and Louis et al. show different convenient locations for vacuum sources.

Regarding claim 14, Figs. 1-4 of Kuzniak show that the vacuum control valves (including 9a and 9b) each include a vacuum opening (near 9a) in the plenum surface (including 3 and 6a) of the vacuum channel (3); and,

a valve plate (e.g., 9a) attached to the plenum surface and operative to seal the vacuum opening against the valve bias at the first pressure differential.

Regarding claim 16, Fig. 2 of Kuzniak shows that the means for applying the plenum vacuum pressure (including 4) to the upstream end of the vacuum channel (3) includes a vacuum starter opening (7) in the plenum surface.

Regarding claim 18, Louis et al. shows that it is well known to provide a conveyer apparatus with adjacent vacuum channels (13). Also, Louis et al. appears to show that all of the adjacent vacuum channels (13) are the same and that they are connected

together. As such, providing a plurality of the vacuum channels of the Kuzniak apparatus adjacently as taught by Louis et al. will result in the Kuzniak apparatus having adjacent vacuum channels that are all the same and are all connected together. In other words, the vacuum starter opening (7) of each of the laterally adjacent vacuum channels will be connected by a starter vacuum conduit (near 1a) to a directly adjacent vacuum channel such that plenum vacuum pressure in the directly adjacent channel when the control valve (e.g., 9b) for the directly adjacent channel is open is communicated to the starter opening (7) of the laterally adjacent channel.

Regarding claim 19, as mentioned above, Louis et al. shows that it is well known to provide a conveyer apparatus with adjacent vacuum channels (13) that are the same and are connected together. As such, providing the vacuum chamber arrangement of Kuzniak in a manner as taught by Louis et al. will result in each starter vacuum conduit (near 1a) including a vacuum inlet end in the plenum surface of the directly adjacent vacuum channel.

Regarding claim 20, again, Louis et al. shows that it is well known to provide a conveyer apparatus with adjacent vacuum channels (13) that are the same and are connected together. As such, providing the vacuum chamber arrangement of Kuzniak in a manner as taught by Louis et al. will result in a vacuum starter opening (7) in each of a selected number of non-adjacent channels and starter vacuum conduits operatively connecting each of the vacuum starter openings (7) with the serially adjacent vacuum channels. More specifically, all of the vacuum channel arrangements will be connected and will be in communication with each other, which will meet the claimed limitations.

Regarding claim 21, Fig. 8 of Kuzniak shows that each of the vacuum control valves (including 9a and 9b) includes a vacuum opening in the plenum surface (including 3 and 6a) of the vacuum channel (3); and,

a poppet valve having a valve head (e.g., 9a) adapted to cover and close the vacuum opening (near 9a) at the first pressure differential, and a valve spring (including 23) operative to bias the valve head (e.g., 9a) to open the vacuum opening (near 9a) at the second pressure differential.

***Allowable Subject Matter***

4. Claims 6 and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Also, these claims need to be amended to overcome the 35 U.S.C. 112, second paragraph rejections above.


***Conclusion***

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas A. Morrison whose telephone number is 703-305-0554. The examiner can normally be reached on M-F, 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Donald Walsh can be reached on 703-306-4173. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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